IN THE CLAIMS:

Please add Claims 34 and 35 as indicated below. The following is a complete listing of claims and replaces all prior versions and listings of claims in the present application:

Claim 1 (previously presented): A transformer for low frequency applications of from 50Hz to 1000Hz, said transformer comprising:

a core having a cylindrical symmetry around a main revolution axis, said core being formed of a soft isotropic magnetic material comprised of iron, said core including integral cooling fins comprising the soft isotropic magnetic material projecting from an external surface of said core; and

windings enclosed in said core and magnetically coupled with said core.

Claim 2 (original): The transformer as claimed in claim 1 wherein said core is formed by core sections.

Claim 3 (original): The transformer as claimed in claim 1 wherein said fins are integrally formed with said core during pressing of said core in a single operation process.

Claim 4 (original): The transformer as claimed in claim 1 wherein said fins are machined in said core in a machining operation.

Claim 5 (previously presented): The transformer as claimed in claim 1 wherein said fins are oriented in a direction of magnetic flux circulation of said core and in planes of said cylindrical symmetry passing through said revolution axis.

Claim 6 (original): The transformer as claimed in claim 1 wherein said core defines a winding window having a circular cross-section in a plane of said cylindrical symmetry passing through said revolution axis.

Claim 7 (original): The transformer as claimed in claim 1 wherein said core defines a winding window having an oval cross-section in a plane of said cylindrical symmetry passing through said revolution axis.

Claim 8 (original): The transformer as claimed in claim 1 wherein said core defines a winding window having a rectangular cross-section, with or without round corners in a plane of said cylindrical symmetry passing through said revolution axis.

Claim 9 (original): The transformer as claimed in claim 1 wherein said core defines a winding window having a trapezoidal cross-section, with or without round corners in a plane of said cylindrical symmetry passing through said revolution axis.

Claim 10 (original): The transformer as claimed in claim 1 wherein said core

is provided with one or more slots placed in planes of said cylindrical symmetry passing through said revolution axis to reduce eddy currents.

Claim 11 (previously presented): The transformer as claimed in claim 1, further comprising:

a primary winding to connect said transformer directly to an AC power supply having a frequency in a range of 50Hz to 1000Hz; and

one or more secondary windings connected to a rectifier using diodes and/or thyristors and/or transistors.

Claim 12 (previously presented): The transformer as claimed in claim 1, characterized in that said transformer has a low level of audible noise when supplied with AC currents at low frequencies in a range of 50Hz to 1000Hz, and substantially no magnetically induced vibrations in said magnetic material thereby minimizing audible noise.

Claim 13 (original): The transformer as claimed in claim 1, said transformer having a low level of electromagnetic interference (EMI) and a low external stray magnetic field.

Claim 14 (original): The transformer as claimed in claim 1, characterized in that when said transformer is connected to an AC power supply having a frequency of from 50Hz to 1000Hz, input currents present a low total harmonic distortion (THD).

Claim 15 (previously presented): The transformer as claimed in claim 1, characterized in that said transformer has small values of form factor (ratio between a height along said revolution axis and an external diameter of said core) when adapted to specific constraints of low profile applications.

Claim 16 (previously presented): An inductor for low frequency applications, DC to 1000Hz, said inductor comprising:

a core having a cylindrical symmetry around a main revolution axis, said core being formed of a soft isotropic magnetic material comprised of iron, said core including integral cooling fins comprising the soft isotropic magnetic material projecting from an external surface of said core; and

a winding enclosed in said core and disposed about a central column of said core and magnetically coupled with the said core.

Claim 17 (previously presented): The inductor as claimed in claim 16 wherein said magnetic core is provided with one or more airgaps, said core has two core sections, and said airgaps are formed by separating said two sections or by using a central column and an external shell of different lengths.

Claim 18 (original): The inductor as claimed in claim 16 wherein said core is formed by core sections.

Claim 19 (original): The inductor as claimed in claim 16 wherein said fins are integrally formed with said core during pressing of said core in a single operation process.

Claim 20 (original): The inductor as claimed in claim 16 wherein said fins are machined in said core in a machining operation.

Claim 21 (previously presented): The inductor as claimed in claim 16 wherein said fins are oriented in a direction of magnetic flux circulation of said core and in planes of said cylindrical symmetry passing through said revolution axis.

Claim 22 (original): The inductor as claimed in claim 16 wherein said core defines a winding window having a circular cross-section in a plane of said cylindrical symmetry passing through said revolution axis.

Claim 23 (original): The inductor as claimed in claim 16 wherein said core defines a winding window having an oval cross-section in a plane of said cylindrical symmetry passing through said revolution axis.

Claim 24 (original): The inductor as claimed in claim 16 wherein said core defines a winding window having a rectangular cross-section with or without round corners in a

plane of said cylindrical symmetry passing through said revolution axis.

Claim 25 (original): The inductor as claimed in claim 16 wherein said core defines a winding window having a trapezoidal cross-section, with or without round corners in a plane of said cylindrical symmetry passing through said revolution axis.

Claim 26 (original): The inductor as claimed in claim 16 wherein said core is provided with one or more slots placed in planes of said cylindrical symmetry passing through said revolution axis to reduce eddy currents.

Claim 27 (previously presented): The inductor as claimed in claim 16, characterized by said inductor having a low level of audible noise when supplied with AC currents at low frequencies in a range of 50Hz to 1000Hz and having substantially no magnetically induced vibrations in said soft magnetic material.

Claim 28 (original): The inductor as claimed in claim 16, characterized in that when said inductor is connected to an AC power supply having a frequency of from 50Hz to 1000Hz, input currents present a low total harmonic distortion (THD).

Claim 29 (original): The inductor as claimed in claim 16, characterized in that copper losses generated by a proximity effect in said winding are minimized when several

individual inductors which possess an airgap of small width are stacked.

Claim 30 (previously presented): The inductor as claimed in claim 16, characterized in that said inductor has small values of form factor (ratio between a height along said revolution axis and an external diameter of said core) when adapted to specific constraints of low profile applications.

Claim 31 (previously presented): The inductor as claimed in claim 16, characterized in that said inductor has a low level of audible noise when supplied with AC currents at low frequencies in a range of DC to 1000Hz and substantially no magnetically induced vibrations in said magnetic material thereby minimizing audible noise.

Claim 32 (previously presented): A transformer as claimed in claim 1 wherein said soft isotropic magnetic material is a composite material comprised of iron and resin.

Claim 33 (previously presented): An inductor as claimed in claim 16 wherein said soft isotropic magnetic material is a composite material comprised of iron and resin.

Claim 34 (new): The transformer as claimed in claim 1 wherein said transformer is a polyphase transformer formed by stacking cores of each phase face to face or with separation airgaps.

Claim 35 (new): The inductor as claimed in claim 16 wherein said inductor is a polyphase inductor formed by stacking cores of each phase face to face or with separation airgaps.